

Application No. 10/561,342  
Amendment dated August 3, 2010  
Reply to Office Action of May 19, 2010

8

Docket No.: 69495(301067)

### **REMARKS**

Claims 1-10 are pending. Claims 8 and 9 are withdrawn, claims 1, 3, 5, 7 and 10 are amended, claims 4 and 6 are canceled, and claim 11 is added herein. Applicants disagree with all rejections and makes these claim changes only to expedite prosecution and move to allowance as soon as possible. No new matter has been added by the amendments, support therefore being found throughout the specification as filed (e.g. see page 6, lines 3-6; page 7, lines 18-20; page 9, lines 7-9, and 17-18; page 9, line 19 – page 10, line 10; page 12, lines 19-22; page 12, line 23 – page 13, line 3; page 14, line 6-22; and page 14, line 23 – page 15, line 15). Favorable reconsideration in light of the remarks which follow is respectfully requested.

#### **1. Specification**

The disclosure is objected to on page 6, lines 4-5 and page 8, line 12 because "polyethylene polymer and polyethylene polymer" is recited. In response, Applicants have amended the Specification to recite "polyethylene polymer and/or polypropylene polymer".

#### **2. 35 U.S.C. §112 Rejections**

Claims 2, 5, 7, and 10 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite.

Claim 2 is amended herein to correct the term "polyethylene" to "polypropylene." In claims 5 and 7, the term "and their mixture(s)" is amended to "and mixtures thereof", which commonly acceptable language that is understood to encompass combinations of the listed components. In claim 10, the term "anlectrochemical", a typographical error, has been canceled in the present amendment.

BOS2 808912.1

Application No. 10/561,342  
Amendment dated August 3, 2010  
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9

Docket No.: 69495(301067)

### 3. Claim Objections

Claim 7 is objected to as being in improper form. In response, claim 7 is amended to depend from claim 5.

### 4. 35 U.S.C. §102 Rejections

Claims 1-6 and 10 are rejected under 35 U.S.C. §102(b) over U.S. Patent Application No. 2005/0053830 to Akashi (hereinafter "Akashi"). Applicants respectfully traverse. However, in the interest of expediting prosecution, and in no way acquiescing to the validity of the Examiner's rejection, Applicants have amended the claims.

In particular, Applicants recite in independent claim 1, a complex membrane for an electrochemical device, comprising a strength support layer and a web-phase electrospinning membrane united to at least one site of the strength support layer. As set out, the strength support layer is a micro-porous polyolefin membrane having a mean flow pore size of 0.005 to 3  $\mu\text{m}$  and a porosity of 30 to 80%. As further set out, the electrospinning membrane is a web-phase porous membrane in which nano-fibers are accumulated by electrospinning to have a mean flow pore size of 0.01 to 3  $\mu\text{m}$  and a porosity of 60 to 95%. As further provided, the complex membrane is a multi-layer complex membrane having a mean flow pore size of 0.01 to 1.5  $\mu\text{m}$ , a porosity of 40% or above and a thickness of 5 to 70  $\mu\text{m}$ .

Akashi describes a solid electrolyte battery that comprises a positive electrode, a negative electrode disposed opposite to the positive electrode, a separator disposed between the positive electrode and the negative electrode, and solid electrolytes disposed between the positive electrode and the separator and between the separator and the negative electrode. According to Akashi, the separator can be formed of a polyolefin such as polyethylene and/or polypropylene, and has a volume porosity of 25-60%.

However, nowhere does Akashi teach or suggest Applicants' complex membrane

BOS2 808912.1

Application No. 10/561,342  
Amendment dated August 3, 2010  
Reply to Office Action of May 19, 2010

10

Docket No.: 69495(301067)

which includes an electrospinning membrane united to at least one site of the strength support layer. In particular, Akashi clearly fails to teach or suggest an electrospinning membrane which is a web-phase porous membrane in which nano-fibers are accumulated by electrospinning to have a mean flow pore size of 0.01 to 3  $\mu\text{m}$  and a porosity of 60 to 95%.

In view thereof, it is respectfully submitted that claim 1 is patentable over Akashi. Claims 2, 3, 5, 7 and 10-11 depend from claim 1 and, thus, also are patentable over Akashi. Reconsideration and withdrawal of the rejections is respectfully requested in view thereof.

### CONCLUSION

Reconsideration and allowance of the claims is respectfully requested in view of the foregoing discussion. This case is believed to be in condition for immediate allowance. Applicant respectfully requests early consideration and allowance of the subject application. If for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge Deposit Account No. 04-1105 under order number 69495(301067).

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Respectfully submitted,



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BOS2 808912.1